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34845	7590	11/14/2006	EXAMINER	
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DATE MAILED: 11/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/543,223

Applicant(s)

JACKSON ET AL.

Examiner

Hanh Phan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-50 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-50 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- ☐ Notice of Informal Patent Application
- ☐ Other: _____.

DETAILED ACTION

1. This Office Action is responsive to the Amendment filed on 10/31/2006.
2. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.
3. The indicated allowability of claims 25-46 is withdrawn in view of the newly discovered reference(s) to Gfeller et al (US Patent No. 6,424,442), Segev (US Patent No. 5,566,022) and Ota et al (US Patent No. 5,986,790). Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
5. Claims 48-50 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

-Claim 48 recites the limitation "**the single optical signal**" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 25-29, 32-36, 39-43 and 46-48 are rejected under 35 U.S.C. 102(e) as being anticipated by Gfeller et al (US Patent No. 6,424,442).

Regarding claims 25, 32 and 39, referring to Figures 14-16 and 22, Gfeller et al. teaches a method of processing data received from a remote device, the method comprising:

receiving a plurality of copies of a single optical signal (i.e., Fig. 14, col. 7, lines 47-67 and col. 8, lines 1-22), the copies created by the remote device, a first copy being transmitted by a first directional transmitter and a second copy being transmitted by a second directional transmitter, the first and second transmitters having non-identical transmission directions, the optical signal being a wireless optical form of a first data signal;

converting the plurality of copies of the optical signal into a plurality of second data signals, each second data signal having data from one of the copies of the optical

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signal (i.e., Figs. 14 and 22, col. 7, lines 47-67, col. 8, lines 1-22, col. 9, lines 49-67 and col. 10, lines 1-28);

storing the plurality of second data signals in memory (i.e., Figs. 14 and 22, col. 7, lines 47-67, col. 8, lines 1-22, col. 9, lines 49-67 and col. 10, lines 1-28) ; and

reconstructing the first data signal from the plurality of second data signals in memory (i.e., Figs. 14 and 22, col. 7, lines 47-67, col. 8, lines 1-22, col. 9, lines 49-67 and col. 10, lines 1-28).

Regarding claims 26, 33 and 40, Gfeller et al. further teaches the act of reconstructing comprises:

designating one of the plurality of copies of the optical signal as a primary optical signal, the second data signal in memory that represents the primary optical signal being a primary second data signal;

retrieving the primary second data signal; and

if the primary second data signal is incomplete, then retrieving additional data of the first data signal from at least one of the other second data signals in memory (i.e., Figs. 14 and 22, col. 7, lines 47-67, col. 8, lines 1-22, col. 9, lines 49-67 and col. 10, lines 1-28).

Regarding claims 27, 34 and 41, Gfeller et al. further teaches the optical signal is an infrared signal (i.e., Figs. 14-16).

Regarding claims 28, 35 and 42, Gfeller et al. further teaches the plurality of copies of the optical signal are received through the air (i.e., Figs. 14-16).

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Regarding claims 29, 36 and 43, Gfeller et al. further teaches the first data signal includes at least one of audio data and video data (i.e., Figs. 14-16).

Regarding claim 46, Gfeller et al further teaches at least two of the plurality of copies of the optical signal are received from different directions (i.e., Figs. 14 and 22, col. 7, lines 47-67, col. 8, lines 1-22, col. 9, lines 49-67 and col. 10, lines 1-28).

Regarding claim 47, referring to Figures 14-16, Gfeller et al. teaches a system for transmitting data signals, the system comprising:

- a first network device having a first transponder (i.e., Fig. 14, col. 7, lines 47-67, col. 8, lines 1-22, col. 9, lines 49-67 and col. 10, lines 1-28) ;

- a second network device having a second transponder (i.e., Fig. 14, col. 7, lines 47-67, col. 8, lines 1-22, col. 9, lines 49-67 and col. 10, lines 1-28), the first and second transponders each utilizing wireless optical signals to communicate,

- the first transponder being configured to transmit a first copy of an optical signal in a first direction; and

- the second transponder being configured to transmit a second copy of the same optical signal in a second direction, wherein the first and second directions are non-identical (i.e., Fig. 14, col. 7, lines 47-67, col. 8, lines 1-22, col. 9, lines 49-67 and col. 10, lines 1-28).

Regarding claim 48, Gfeller et al. further teaches the second transponder is configured to receive at least one of the plurality of copies of the optical signal (i.e., Fig. 14, col. 7, lines 47-67, col. 8, lines 1-22, col. 9, lines 49-67 and col. 10, lines 1-28).

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8. Claims 25-29, 32-36, 39-43 and 46-48 are rejected under 35 U.S.C. 102(b) as being anticipated by Segev (US Patent No. 5,566,022).

Regarding claims 25, 32 and 39, referring to Figures 3-19, Segev teaches a method of processing data received from a remote device, the method comprising:

receiving a plurality of copies of a single optical signal (i.e., Figs. 4-19, see from col. 5, line 36 to col. 12, line 28), the copies created by the remote device, a first copy being transmitted by a first directional transmitter and a second copy being transmitted by a second directional transmitter, the first and second transmitters having non-identical transmission directions, the optical signal being a wireless optical form of a first data signal;

converting the plurality of copies of the optical signal into a plurality of second data signals, each second data signal having data from one of the copies of the optical signal (i.e., Figs. 3-19, see from col. 5, line 36 to col. 12, line 28);

storing the plurality of second data signals in memory (i.e., Figs. 3-19, see from col. 5, line 36 to col. 12, line 28) ; and

reconstructing the first data signal from the plurality of second data signals in memory (i.e., see from col. 5, line 36 to col. 12, line 28).

Regarding claims 26, 33 and 40, Segev further teaches the act of reconstructing comprises:

designating one of the plurality of copies of the optical signal as a primary optical signal, the second data signal in memory that represents the primary optical signal being a primary second data signal;

retrieving the primary second data signal; and

if the primary second data signal is incomplete, then retrieving additional data of the first data signal from at least one of the other second data signals in memory (i.e., see from col. 5, line 36 to col. 12, line 28).

Regarding claims 27, 34 and 41, Segev further teaches the optical signal is an infrared signal (i.e., Figs. 3-19).

Regarding claims 28, 35 and 42, Segev further teaches the plurality of copies of the optical signal are received through the air (i.e., Figs. 3-19).

Regarding claims 29, 36 and 43, Segev further teaches the first data signal includes at least one of audio data and video data (i.e., Figs. 3-19).

Regarding claim 46, Segev further teaches at least two of the plurality of copies of the optical signal are received from different directions (i.e., see from col. 5, line 36 to col. 12, line 28).

Regarding claim 47, referring to Figures 3-19, Gfeller et al. teaches a system for transmitting data signals, the system comprising:

a first network device having a first transponder (i.e., Figs. 3-19, see from col. 5, line 36 to col. 12, line 28) ;

a second network device having a second transponder (i.e., Figs. 3-19, see from col. 5, line 36 to col. 12, line 28), the first and second transponders each utilizing wireless optical signals to communicate,

the first transponder being configured to transmit a first copy of an optical signal in a first direction; and

the second transponder being configured to transmit a second copy of the same optical signal in a second direction, wherein the first and second directions are non-identical (i.e., see from col. 5, line 36 to col. 12, line 28).

Regarding claim 48, Segev further teaches the second transponder is configured to receive at least one of the plurality of copies of the optical signal (i.e., see from col. 5, line 36 to col. 12, line 28).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1, 2, 5-10, 13-18, 21-24, 30, 31, 37, 38, 44, 45, 49 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gfeller et al (US Patent No. 6,424,442) in view of Dewberry et al (US Patent No. 6,507,425).

Regarding claims 1, 9, 17, 30, 31, 37, 38, 44, 45, 49 and 50, referring to Figures 1-20, Gfeller et al. teaches a method of processing a data signal for transmission to a remote device, the method comprising:

producing a signal (i.e., Figs. 1, 3, 5, 7-12, 14, see from col. 4, line 45 to col. 7, line 65);

converting the signal to an outgoing signal, the outgoing signal being a wireless optical signal (i.e., Figs. 1, 3, 5, 7-12, 14, see from col. 4, line 45 to col. 7, line 65);

transmitting a plurality of copies of the outgoing signal, at least two copies of the outgoing signal being transmitted in different directions, a first copy being transmitted by a first directional transmitter and a second copy being transmitted by a second directional transmitter, the first and second transmitters having non-identical transmission directions (i.e., Figs. 1, 3, 5, 7-12, 14, see from col. 4, line 45 to col. 8, line 22).

Gfeller et al. differs from claims 1, 9, 17, 30, 31, 37, 38, 44, 45, 49 and 50 in that he does not specifically teach synchronizing a data signal with a clock signal. Dewberry, from the same field of endeavor, likewise teaches an optical wireless transceiver (Figure 3). Dewberry further teaches that the signal converted to an outgoing signal is a composite signal which is produced by synchronizing a data signal with a clock signal (i.e., Fig. 3, col. 3, lines 40-67 and col. 4, lines 1-12). Based on this teaching, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the synchronizing a data signal with a clock signal as taught by Dewberry in the system of Gfeller et al. One of ordinary skill in the art would have been motivated to do this since allowing maintaining the synchronism between the transmitter and receiver during data transfer.

Regarding claims 2, 10 and 18, the combination of Gfeller et al. and Dewberry teaches the outgoing signal is in the infrared spectrum (i.e., Figs. 1-10 of Gfeller et al. and Fig. 3 of Dewberry).

Regarding claims 5, 13 and 21, the combination of Gfeller et al. and Dewberry teaches receiving an incoming signal, the incoming signal being an optical signal and

having a specified timing signal, the clock signal of the composite signal being synchronized with the specified timing signal (i.e., Fig. 1 of Dewberry).

Regarding claims 6, 14 and 22, the combination of Gfeller et al. and Dewberry teaches wherein the data signal includes at least one of video data and audio data (i.e., Figs. 1-20 of Gfeller et al. and Fig. 1 of Dewberry).

Regarding claims 7, 15 and 23, the combination of Gfeller et al. and Dewberry teaches wherein the plurality of copies of the outgoing signal are transmitted through the air (i.e., Figs. 1-20 of Gfeller et al.).

Regarding claims 8, 16 and 24, the combination of Gfeller et al. and Dewberry teaches where the different directions overlap (i.e., Figs. 1-20 of Gfeller et al.).

11. Claims 3, 11 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gfeller et al et al (US Patent No. 6,424,442) in view of Dewberry et al (US Patent No. 6,507,425) and further in view of Ota et al (US Patent No. 5,986,790).

Regarding claims 3, 11 and 19, Gfeller et al. as modified by Dewberry teaches all the aspects of the claimed invention except fails to teach amplifying the outgoing signal. Ota from the same field of endeavor, likewise teaches an optical wireless transceiver (Figures 10-14). Ota further teaches amplifying the outgoing signal (i.e., Fig. 12, col. 12, lines 9-24). Based on this teaching, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the amplifying the outgoing signal as taught by Ota in the system of Gfeller et al. modified by Dewberry. One of ordinary

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skill in the art would have been motivated to do this since allowing increasing the power level of the signal to a desired level.

12. Claims 4, 12 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gfeller et al (US Patent No. 6,424,442) in view of Dewberry et al (US Patent No. 6,507,425) and further in view of Rutledge (US Patent No. 5,864,625).

Regarding claims 4, 12 and 20, Gfeller et al. as modified by Dewberry teaches all the aspects of the claimed invention except fails to teach encrypting the composite signal prior to converting it to the outgoing signal. However, Rutledge in US Patent No. 5,864,625 teaches encrypting the composite signal prior to converting it to the outgoing signal (i.e., Fig. 1, col. 3, lines 6-67 and col. 4, lines 1-14). Therefore, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the encrypting the composite signal prior to converting it to the outgoing signal as taught by Rutledge in the system of Gfeller et al. modified by Dewberry. One of ordinary skill in the art would have been motivated to do this since allowing a secure optical communications link.

13. Claims 1, 2, 5-10, 13-18, 21-24, 30, 31, 37, 38, 44, 45, 49 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Segev (US Patent No. 5,566,022) in view of Dewberry et al (US Patent No. 6,507,425).

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Regarding claims 1, 9, 17, 30, 31, 37, 38, 44, 45, 49 and 50, referring to Figures 3-19, Segev teaches a method of processing a data signal for transmission to a remote device, the method comprising:

producing a signal (i.e., Figs. 3-19, see from col. 5, line 36 to col. 12, line 28);

converting the signal to an outgoing signal, the outgoing signal being a wireless optical signal (i.e., Figs. 3-19, see from col. 5, line 36 to col. 12, line 28);

transmitting a plurality of copies of the outgoing signal, at least two copies of the outgoing signal being transmitted in different directions, a first copy being transmitted by a first directional transmitter and a second copy being transmitted by a second directional transmitter, the first and second transmitters having non-identical transmission directions (i.e., Figs. 3-19, see from col. 5, line 36 to col. 12, line 28).

Segev differs from claims 1, 9, 17, 30, 31, 37, 38, 44, 45, 49 and 50 in that he does not specifically teach synchronizing a data signal with a clock signal. Dewberry, from the same field of endeavor, likewise teaches an optical wireless transceiver (Figure 3). Dewberry further teaches that the signal converted to an outgoing signal is a composite signal which is produced by synchronizing a data signal with a clock signal (i.e., Fig. 3, col. 3, lines 40-67 and col. 4, lines 1-12). Based on this teaching, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the synchronizing a data signal with a clock signal as taught by Dewberry in the system of Segev. One of ordinary skill in the art would have been motivated to do this since allowing maintaining the synchronism between the transmitter and receiver during data transfer.

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Regarding claims 2, 10 and 18, the combination of Segev and Dewberry teaches the outgoing signal is in the infrared spectrum (i.e., see from col. 5, line 36 to col. 12, line 28).

Regarding claims 5, 13 and 21, the combination of Segev and Dewberry teaches receiving an incoming signal, the incoming signal being an optical signal and having a specified timing signal, the clock signal of the composite signal being synchronized with the specified timing signal (i.e., Fig. 1 of Dewberry).

Regarding claims 6, 14 and 22, the combination of Segev and Dewberry teaches wherein the data signal includes at least one of video data and audio data (i.e., Figs. 3-19 of Segev and Fig. 1 of Dewberry).

Regarding claims 7, 15 and 23, the combination of Segev and Dewberry teaches wherein the plurality of copies of the outgoing signal are transmitted through the air (i.e., Figs. 3-19 of Segev).

Regarding claims 8, 16 and 24, the combination of Segev and Dewberry teaches where the different directions overlap (i.e., Figs. 3-19 of Segev).

14. Claims 3, 11 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Segev (US Patent No. 5,566,022) in view of Dewberry et al (US Patent No. 6,507,425) and further in view of Ota et al (US Patent No. 5,986,790).

Regarding claims 3, 11 and 19, Segev as modified by Dewberry teaches all the aspects of the claimed invention except fails to teach amplifying the outgoing signal. Ota from the same field of endeavor, likewise teaches an optical wireless transceiver

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(Figures 10-14). Ota further teaches amplifying the outgoing signal (i.e., Fig. 12, col. 12, lines 9-24). Based on this teaching, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the amplifying the outgoing signal as taught by Ota in the system of Segev modified by Dewberry. One of ordinary skill in the art would have been motivated to do this since allowing increasing the power level of the signal to a desired level.

15. Claims 4, 12 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Segev (US Patent No. 5,566,022) in view of Dewberry et al (US Patent No. 6,507,425) and further in view of Rutledge (US Patent No. 5,864,625).

Regarding claims 4, 12 and 20, Segev as modified by Dewberry teaches all the aspects of the claimed invention except fails to teach encrypting the composite signal prior to converting it to the outgoing signal. However, Rutledge in US Patent No. 5,864,625 teaches encrypting the composite signal prior to converting it to the outgoing signal (i.e., Fig. 1, col. 3, lines 6-67 and col. 4, lines 1-14). Therefore, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the encrypting the composite signal prior to converting it to the outgoing signal as taught by Rutledge in the system of Segev modified by Dewberry. One of ordinary skill in the art would have been motivated to do this since allowing a secure optical communications link.

Response to Arguments

16. Applicant's arguments with respect to claims 1-50 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh Phan whose telephone number is (571)272-3035.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan, can be reached on (571)272-3022. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-4700.


HANH PHAN
PRIMARY EXAMINER